Claims

1. Apparatus for connecting to a subsea wellbore, the wellbore having a manifold and a choke body, the apparatus comprising:

a frame adapted to land on the manifold;

a conduit system having a first end for connection to the choke body and a second end for connection to a processing apparatus;

wherein the conduit system comprises a conduit means supported by the frame;

wherein the frame comprises at least one frame member that is adapted to land on the manifold in a first stage of the connection and wherein the conduit means is adapted to be brought into fluid communication with the choke body in a second stage of the connection.

2. Apparatus as claimed in claim 1, further comprising an actuating means mounted on the frame, the actuating means being adapted to bring the conduit means into fluid communication with the choke body.

3. Apparatus as claimed in claim 2, wherein the actuating means comprises at least one hydraulic cylinder.

4. Apparatus as claimed in any preceding claim, wherein the conduit means comprises a flexible conduit.

5. Apparatus as claimed in claim 4, wherein the flexible conduit is arranged to buffer the connection of the conduit means and the choke body.

6. Apparatus as claimed in claim 4 or claim 5 wherein the flexible conduit has an end that is fixed relative to the frame and an opposite end that is moveable relative to the frame.

7. Apparatus as claimed in any of claims 4 to 6 when dependent on claim 2, wherein the actuating means is adapted to move the movable end of the flexible conduit relative to the frame to bring it into fluid communication with the choke body.

8. Apparatus as claimed in claim 7, wherein the actuation means comprises at least one swivel device that allows movement of the end of the flexible conduit in more than one dimension.

9. Apparatus as claimed in any of claims 4 to 8, wherein the flexible conduit is resilient.

10. Apparatus as claimed in claim 9, wherein the flexible conduit is curved to provide resilience.

11. Apparatus as claimed in claim 10, wherein the direction of movement of the flexible conduit in the second stage of the connection defines an axis of connection and wherein the curvature is in a plane perpendicular to the axis of connection to provide resilience in the connection direction.

12. Apparatus as claimed in any of claims 4 to 11, wherein the conduit means comprises two flexible conduits.

13. Apparatus as claimed in claim 12, wherein each of the two conduits is fixed at a respective end thereof relative to the frame and wherein each of the two conduits has a respective opposite end that is moveable relative to the frame.

14. Apparatus as claimed in any preceding claim, wherein the conduit system further comprises a secondary conduit that is connected to the interior of the choke body and wherein the conduit means is adapted to connect to the secondary conduit in the second stage of the connection to connect the conduit means to the choke body via the secondary conduit.

15. Apparatus as claimed in claim 2 or claim 3, wherein the frame comprises a lower frame member and an upper frame member, the conduit means being mounted on the upper frame member, and wherein the actuating means is mounted between the lower and upper frame members and is adapted to move the upper frame member relative to the lower frame member to bring the conduit means into fluid communication with the choke body.

16. Apparatus as claimed in claim 15, wherein the actuating means is adapted to buffer the connection between the conduit means and the choke body.

17. Apparatus as claimed in claim 1, wherein the at least one frame member of the first connection stage comprises a lower frame member, and wherein the apparatus further comprises an upper frame member, the upper frame member and the lower frame member having co-operating engagement means for landing the upper frame member on the lower frame member.

18. Apparatus as claimed in claim 17, further comprising buffering means provided on the frame, the buffering means defining a minimum distance between the frame and the tree.

19. Apparatus as claimed in claim 18, wherein a further buffering means is provided between the lower and upper frame members to define a minimum distance between the lower and upper frame members.

20. Apparatus as claimed in claim 18 or 19, wherein the buffering means comprises adjustable stops.

21. Apparatus as claimed in claim 20, wherein the buffering means comprises threaded bolts.

22. Apparatus as claimed in any of claims 17 to 21, wherein the conduit system comprises a secondary conduit that is connected to the choke body and wherein the conduit means is adapted to connect to

the secondary conduit in the second stage of the connection to connect the conduit means to the choke body via the secondary conduit.

23. Apparatus as claimed in claim 22, wherein the secondary conduit is supported on the lower frame member.

24. Apparatus as claimed in any preceding claim, wherein the conduit system provides a single flowpath between the choke body and the processing apparatus.

25. Apparatus as claimed in any of claims 1 to 23, wherein the conduit system provides a first flowpath from the choke body to the processing apparatus and a second flowpath from the processing apparatus to the choke body.

26. Apparatus as claimed in claim 25, wherein the conduit system comprises a housing and an inner hollow cylindrical member, the inner cylindrical member being adapted to seal within the choke body to define a first flow region through the bore of the cylindrical member and a second separate flow region in the annulus between the cylindrical member and the housing.

27. Apparatus as claimed in claim 26, wherein the first and second flow regions are adapted to connect to a respective inlet and an outlet of the processing apparatus.

28. Apparatus as claimed in any preceding claim, wherein the processing apparatus is provided on the frame.

29. Apparatus as claimed in any of claims 1 to 27, wherein the processing apparatus is provided on a separate subsea structure.

30. Apparatus as claimed in any preceding claim, wherein the processing apparatus comprises at least one of: a pump; a process fluid turbine; injection apparatus; chemical injection apparatus; a fluid riser; measurement apparatus; temperature measurement apparatus; flow rate measurement apparatus; constitution measurement apparatus; consistency measurement apparatus; gas separation apparatus; water separation apparatus; solids separation apparatus; and hydrocarbon separation apparatus.

31. Apparatus as claimed in any preceding claim, wherein the frame includes guide means that co-operate with guide means provided on the manifold, to align the frame with the manifold.

32. Apparatus as claimed in any preceding claim, wherein a replacement choke is provided on the frame, the replacement choke being connectable to the conduit system.

33. A method of connecting a processing apparatus to a subsea wellbore, the wellbore having a manifold and a choke body, the method comprising:

landing a frame on the manifold and connecting a conduit system between the choke body and the processing apparatus, the frame supporting a conduit means of the conduit system;

wherein the frame comprises at least one frame member that is landed on the manifold in a first connection stage, and wherein the conduit means is brought into fluid communication with the choke body in a second connection stage.

34. A method as claimed in claim 33, wherein actuating means are mounted on the frame, and wherein the method includes the step of actuating the actuating means to bring the conduit means into fluid communication with the choke body.

35. A method as claimed in claim 34, wherein the conduit means comprises a flexible conduit, one end of which is moveable relative to the frame, and wherein the method includes actuating the actuating means to move the end of the flexible portion relative to the frame to bring it into fluid communication with the choke body.

36. A method as claimed in any of claims 33 to 35, wherein the conduit system further comprises a secondary conduit that is connected to the choke body and wherein the method includes the step of

connecting the conduit means to the secondary conduit in the second stage of the connection.

37. A method as claimed in claim 33 or claim 34, wherein the frame comprises a lower frame member and an upper frame member, the conduit means being supported on the upper frame member, wherein the actuating means is mounted between the lower and upper frame members, and wherein the method includes the step of actuating the actuation means to move the upper frame member relative to the lower frame member to bring the conduit means into fluid communication with the choke body.

38. A method as claimed in claim 33, wherein the at least one frame member of the first connection stage comprises a lower frame member, and wherein the apparatus further comprises an upper frame member, and wherein the method includes the step of landing the upper frame member on the lower frame member.

39. A method as claimed in claim 38, further including the step of buffering the connection between the choke body and the conduit means.

40. A method as claimed in claim 39, wherein stop means are provided on the lower frame member, and the connection is buffered by adjusting the stop means to define a minimum distance between the manifold and the lower frame member.

41. A method as claimed in claim 39 or claim 40, including the further step of buffering the connection between the lower and upper frame members by providing stop means between the lower and upper frame members, the connection being buffered by adjusting the stop means to define a minimum distance between the upper and the lower frame members.

42. A method as claimed in any of claims 38 to 41, wherein the conduit system comprises a secondary conduit that is connected to the choke body and wherein the method includes the step of connecting the conduit means to the secondary conduit in the second stage of the connection.

43. A method as claimed in claim 42, wherein the method includes the initial steps of removing the choke bonnet and connecting the secondary conduit to interior of the choke body.

44. A method as claimed in claim 43, wherein the choke bonnet is removed and the secondary conduit is installed by choke bonnet changing equipment.

45. A method as claimed in claim 43, wherein the secondary conduit is supported on the lower frame member.

46. A method as claimed in any of claims 33 to 45, wherein the conduit system provides a first flowpath from the choke body to the processing apparatus and

a second flowpath from the processing apparatus to the choke body and wherein the method includes the step of connecting the first and second flow regions to a respective inlet and an outlet of the processing apparatus.

47. A method as claimed in any of claims 33 to 46, wherein the processing apparatus is provided on the frame, and wherein the method includes the step of connecting the conduit means to the processing apparatus before landing the frame on the manifold.

48. A method as claimed in any of claims 33 to 46, wherein the processing apparatus is provided on a separate subsea structure and the method includes the step of connecting the conduit means to the processing apparatus after landing the frame on the manifold.

49. A method as claimed in any of claims 33 to 48, wherein the method includes the step of connecting a replacement choke with the conduit system so that fluids flowing through the conduit system also flow through the replacement choke.

50. Apparatus for connecting to a subsea wellbore, the wellbore having a manifold and a choke body, the apparatus comprising:

a frame having a conduit system, the frame being adapted to land on the tree, the conduit system including a first end which is adapted to connect to the choke body such that the conduit is

in fluid communication with the interior of the choke body, and a second end connectable to a processing apparatus;

wherein the frame comprises buffering means adapted to buffer the connection between the first end of the conduit system and the choke body.

51. Apparatus for connecting to a subsea wellbore, the wellbore having a manifold and a choke body, the apparatus comprising:

a frame adapted to land on the manifold;

a conduit system having a first end for connection to the choke body and a second end for connection to a processing apparatus;

wherein at least a part of the conduit system is supported by the frame;

wherein the conduit system comprises at least one flexible conduit having an end that is moveable relative to the frame to make up a communication between the processing apparatus and the choke body.